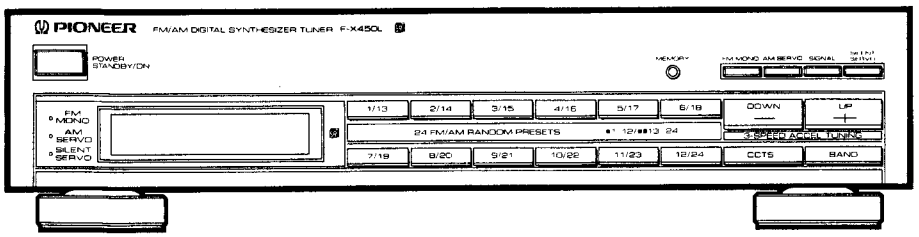
PIONEER®
The future of sound and vision.

Original

F-X450L
F-X450

Model designed exclusively for use in Italy /
Modello progettato esclusivamente per l'Italia

FM/AM DIGITAL SYNTHESIZER TUNER
SYNTONISEUR SYNTHETISEUR A AFFICHAGE NUMERIQUE FM/AM
UKW/MW DIGITALER SYNTHESIZER TUNER
SINTONIZZATORE DIGITALE FM/AM CON SINTETIZZATORE
FM/AM DIGITALE SYNTHESIZER TUNER
FM/AM DIGITAL SYNTHSTUNER
SINTONIZADOR SINTETIZADOR DIGITAL FM/AM
SINTONIZADOR SINTETIZADOR DIGITAL FM/AM



Operating Instructions
Mode d'emploi
Bedienungsanleitung
Instruzioni per l'uso
Gebruiksaanwijzing
Bruksanvisning
Manual de instrucciones
Manual de instruções

English
Français
Deutsch
Italiano
Nederlands
Svenska
Español
Português

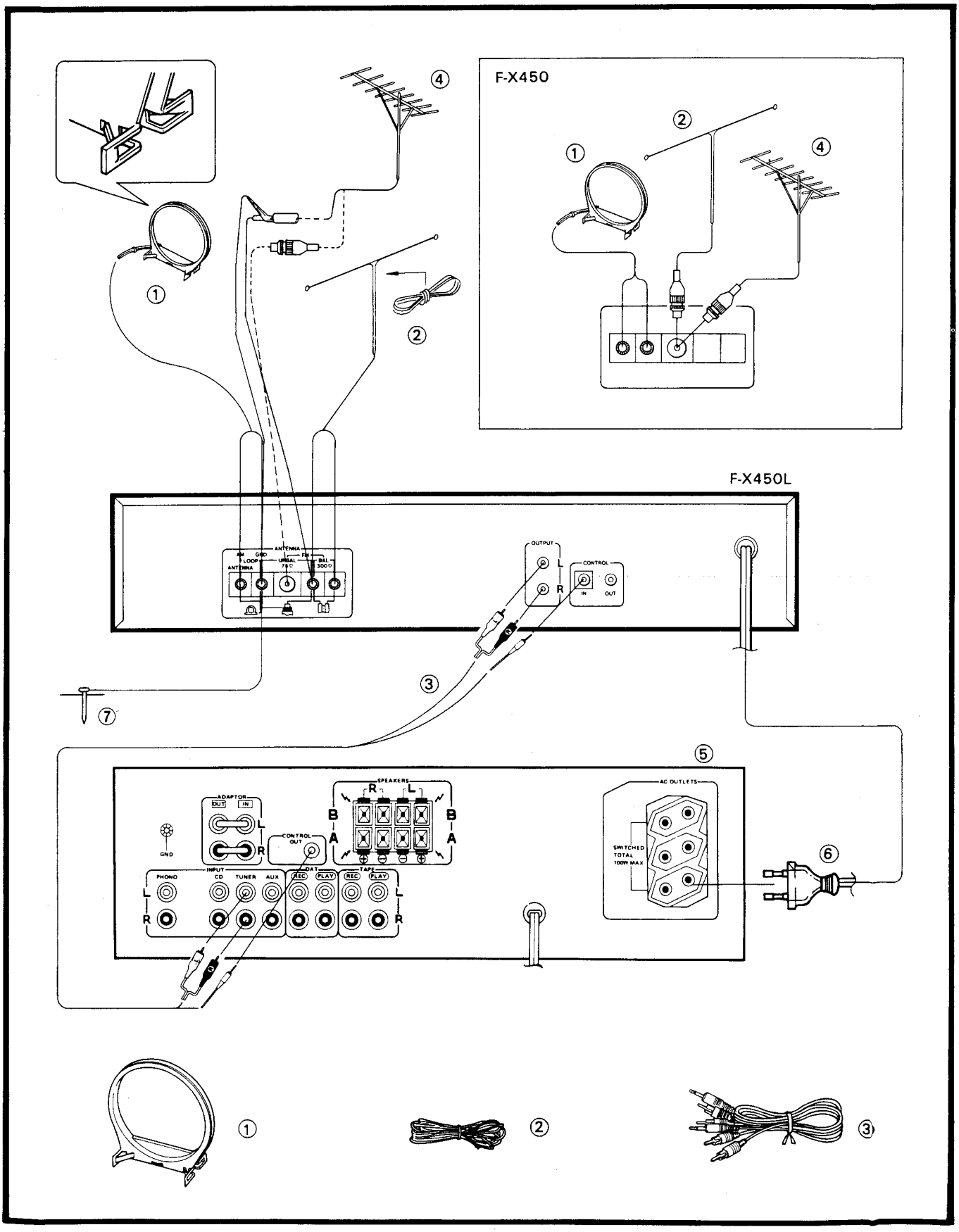
IMPORTANT

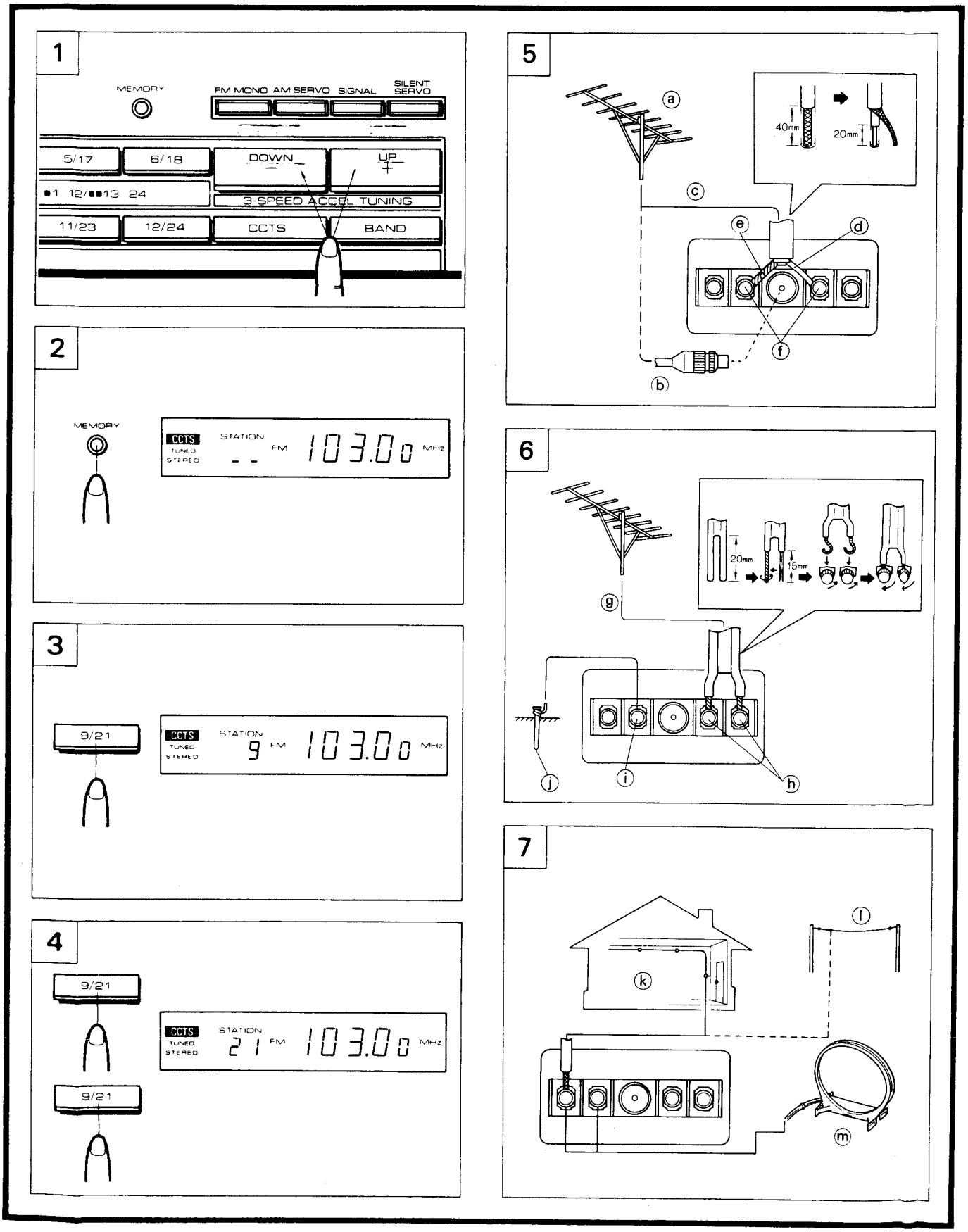
The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.


F-X450
F-X450L
ANTENNA
AM LOOP ANTENNA
GND
FM UNBAL 75Ω
FM BAL 300Ω
OUTPUT
L
R
CONTROL
IN
OUT
SPEAKERS
B A
ADAPTOR
OUT
IN
CONTROL OUT
GND
INPUT
PHONO
CD
TUNER
AUX
DAT
REC
PLAY
TAPE
AC OUTLETS
SWITCHED TOTAL 100W MAX
①
②
③
④
⑤
⑥
⑦


1
MEMORY
FM MONO AM SERVO SIGNAL
SILENT SERVO
5/17
6/18
DOWN
UP
■1 12/■■13 24
3-SPEED ACCEL TUNING
11/23
12/24
CCTS
BAND
2
MEMORY
CCTS
TUNED
STEREO
STATION
FM
103.00
MHz
3
9/21
CCTS
TUNED
STEREO
STATION
9
FM
103.00
MHz
4
9/21
CCTS
TUNED
STEREO
STATION
21
FM
103.00
MHz
9/21
5
a
40mm
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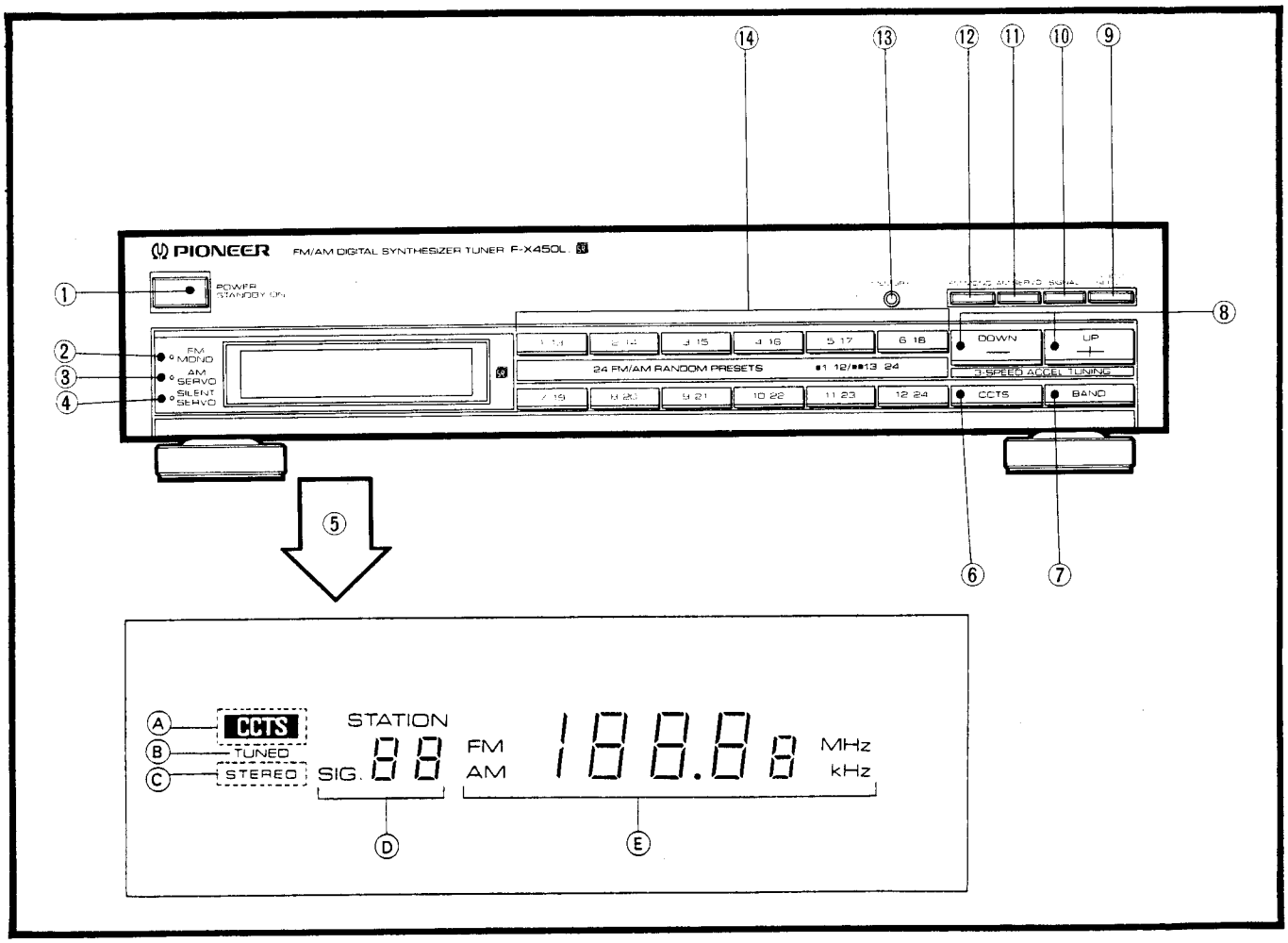
PIONEER
FM/AM DIGITAL SYNTHESIZER TUNER F-X450L
POWER
STANDBY/ON
FM MONO
AM SERVO
SILENT SERVO
24 FM/AM RANDOM PRESETS
DOWN
UP
3-SPEED ACCEL TUNING
CCTS
BAND
STATION
SIG.
FM
AM
MHz
kHz
TUNED
STEREO

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

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Memorizing FM and AM (MW or LW) Stations 7
Hints for Better Reception 8
Troubleshooting 9
Specifications 9

FEATURES

CCTS (Computer Controlled Tuning System) tuning for optimum sound quality

- Reduces tracking errors when you are receiving FM and AM broadcasts.
- Provides a digital indication of the electric field strength of the received broadcast.

24 FM/AM random memorizing

SILENT SERVO circuit

Since the clock frequency is not needed after tuning has been completed, this circuit cuts it out, thereby improving sound quality by avoiding the noise and intermodulation distortion that could be caused by spurious high frequency "beat" interference.

AM SERVO circuit

This dramatically reduces distortion by actively adjusting AGC (automatic gain control) response time during and after tuning.

CONNECTIONS (AND ACCESSORIES) (See page 2)

① Accessory AM Loop Antenna

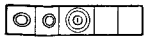
- Unfold all four legs of the AM loop antenna toward the outside, and insert the stopper inside the legs into the hole in the AM loop antenna to fix it in position.
- Set the antenna on a level surface, and point in the direction that gives optimum reception.
- Do not install the antenna in locations where it touches the cover of the unit or other metal objects, or near a CD player, personal computer, or television set.

1. Strip the end of the wires.
2. Wrap the end of the wire in a clockwise direction around the base of the terminals and tighten the terminals to secure.

② Accessory FM T-type antenna

- Use for FM reception until special-purpose FM antenna is installed.
- Stretch both ends taut and affix to a wall, etc.

NOTE:
Refer to the upper right part of the illustration on page 2 if the antenna terminals are of the type shown here:



③ Accessory Pin plug and Miniplug connecting cord.

- Connect the white plug to the white terminal (L) and the red plug to the red terminal (R).
- Make sure that there is a proper connection.

④ Outdoor FM antenna

⑤ Stereo amplifier

⑥ Connecting the power cord
Plug the power cord into (SWITCHED) the auxiliary power outlet on the amplifier or into an AC wall socket.

⑦ Antenna ground
Although grounding is not always necessary for reception, it is recommended for protection against damage from lightning if an outdoor FM antenna is used. Grounding is recommended as well to help reduce noise and hum.

NOTE:
Never make the ground connection to a gas pipe as sparks could cause the gas to ignite.

*** Control Terminals**
When using together with Pioneer component, with SR mark, connect the CONTROL IN terminal on the rear panel of the tuner to the CONTROL OUT terminal on the component. This will enable the tuner to be controlled from a distance, with the remote control unit supplied with the component.

When this feature is not used, connection is not necessary.

- The remote control unit can be used for band selecting and memorized station tuning operations.
- Connect it using accessory miniature phone plugs.
- For instructions regarding connection and operation, please refer to the operating instructions for your stereo component.

FRONT PANEL FACILITIES (See page 4)

① POWER (STANDBY/ON) switch

When this switch is set to the on position, power is supplied to the tuner's main circuits. The POWER unit's switch is geared to selecting the transformer's secondary so that even in STANDBY position, the unit's circuitry will work as long as the power cord is connected to a power outlet. Disconnect the power cord from the power outlet when you do not plan to use the unit for a long period of time.

NOTE:

The memory will be backed up so long as the power cord is not unplugged.

If the power cord is unplugged, the memory will be retained for several days.

② FM MONO indicator (During FM reception)

This lights when the FM MONO switch is turned on.

③ AM SERVO indicator (During AM reception)

This lights when the AM SERVO switch is turned on.

④ SILENT SERVO indicator (During FM reception)

This lights when the SILENT SERVO switch is turned on.

⑤ DISPLAY SECTION

Ⓐ CCTS indicator
This lights when the CCTS switch is turned on.

Ⓑ TUNED indicator
This lights to confirm fine tuning.

Ⓒ STEREO indicator (FM)
This lights to confirm reception of an FM stereo broadcast.

Ⓓ STATION/SIGNAL display
Shows memorized station number (1-24). Shows signal strength (0-9) when the SIGNAL switch is pressed.

Ⓔ Frequency display

⑥ CCTS switch (Computer controlled tuning system)

When this switch is set to ON (the CCTS indicator lights), the unit's built-in microcomputer automatically performs the optimum tuning for the station received.

⑦ BAND switch

Each time this switch is pressed, FM, AM (MW or LW) reception is selected alternately.
FM and MHz light: FM reception.
AM and kHz light: AM (MW or LW) reception.

⑧ TUNING switches (DOWN –, UP +)

These are used to locate stations. Push the "DOWN –" switch to locate a station broadcasting on a lower frequency and the "UP +" switch to locate a station broadcasting on a higher frequency.

⑨ SILENT SERVO switch (Operates only during FM reception.)

When this switch is on (as confirmed by the SILENT SERVO indicator), the SILENT SERVO circuit operates after tuning has been completed, cutting out spurious high frequency clock signal harmonics in order to minimize intermodulation (beat) distortion, improve the signal-to-noise ratio, and elevate sound quality.

⑩ SIGNAL switch

When this switch is pressed, the operation display will show a digital number "0" – "9". The size of the number corresponds to the strength of the reception signal, "9" representing the strongest, and "0" when there is no signal. In this way, this function can be used when installing an antenna to allow orientation of the antenna for optimum reception.

⑪ AM SERVO switch

When this switch is on (as confirmed by the AM SERVO indicator), the AM SERVO circuit operates to minimize distortion on the AM (MW or LW) band.

⑫ FM MONO switch

Normally, when receiving an FM stereo broadcast, leave this switch OFF. If the broadcast station is distant, or if you are in a poor reception area, the input signals will be weak, and during stereo reception, noise will be prominent, making the broadcast difficult to hear. In such a case, press ON this switch. The broadcast will be reproduced in monaural, however noise will be reduced, enabling the broadcast to be heard more clearly.

NOTE:

- *This switch does not function when you are listening to an AM (MW or LW) broadcast.*
- *The ON or OFF status of the FM MONO switch will be memorized when you preset a station in the STATION CALL switch. By using the MEMORIZING FM AND AM (MW or LW) STATIONS function, you can receive an FM broadcast at any time in the same mode.*

⑬ MEMORY switch

This is used to memorize stations.

⑭ STATION CALL switches

These are used to memorize and recall broadcasting stations.

LISTENING TO BROADCASTS

Listening to FM or AM (MW or LW) broadcasts.

1 **Press the POWER switch to ON.**

2 **Use the BAND switch to select either the FM or AM (MW or LW) reception band.**
- For FM broadcasts, the "FM" and "MHz" indicators will light.
- For AM (MW or LW) broadcasts, the "AM" and "kHz" indicators will light.

3 **Press the "DOWN –" or "UP +" the TUNING switch.**
[When the CCTS switch is ON:]
- When you press ON the CCTS switch, the internal computer will search for the best tuning point. During this search operation, no sound will be emitted.

When the AM SERVO switch is on (during AM reception): AM bass distortion is reduced and frequency response extended.
When the SILENT SERVO switch is on (during FM reception): Beat interference is prevented by cutting out the clock frequency after FM tuning.

NOTE:
Tuning takes slightly more time with the CCTS, AM SERVO, or SILENT SERVO functions on.

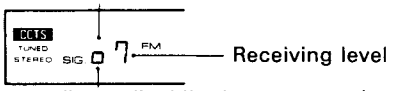
Auto tuning:

Press the tuning switch until the frequency starts to change, then release it.

The tuner will automatically search for a broadcasting station, and stop when one is found. To search for another station, press again.
- To interrupt auto tuning, press the TUNING switch.

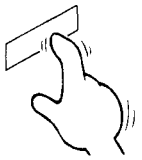
CCTS function

When a station is tuned in, the level indicator will indicate the receiving level for several seconds, then indicate the station number once again.
Goes out after CCTS operation is completed.



Segments "rotate" while the computer is searching for the best tuning point.

Manual tuning:



Press and release quickly

The tuning frequency will change by one step each time the switch is pressed. Press as many times as necessary to tune in the desired station.
- If the switch is held depressed, the reception frequency will change continuously, and stop when the switch is released.

4 **When you wish to receive a different station within the same band, repeat step 3. To receive a station on a different reception band, repeat steps 2 and 3.**

5 **Adjust the volume and tone of the stereo amplifier.**

NOTE:
- *When AUTO TUNING is in use, reception may not be possible over long distances or when signals are weak. At these times MANUAL TUNING is recommended.*
- *SILENT SERVO does not operate at the upper and lower limits (108 MHz, 87.55 MHz and 87.5 MHz) of the receivable band.*

MEMORIZING FM AND AM (MW or LW) STATIONS

(See page 3 Fig. 1 ~ Fig. 4)

You can preset 12 FM and AM (MW or LW) stations in Mode 1 (station call switch No. 1~12), and 12 stations in Mode 2 (station call switch No. 13~24), that is, a total of 24 stations. (See page 3)

1 **Press the POWER switch to ON.**

2 **Use the BAND switch to select either the FM or AM (MW or LW) reception band.**
- For FM broadcasts, the "FM" and "MHz" indicators will light.
- For AM (MW or LW) broadcasts, the "AM" and "kHz" indicators will light.

3 **Use the TUNING switch to tune in the desired station. (Fig. 1)**
- When memorizing, if you think it takes too long to receive the signal, with the CCTS switch on, turn off the CCTS switch.

When memorizing an FM station, either press the FM MONO switch to forcibly memorize the station in the monaural mode, or memorize the station in the auto stereo mode (with FM MONO switch left in the OFF position).
Memory also stores the status of the AM SERVO and SILENT SERVO (FM) switches.

4 **Press the MEMORY switch. (Fig. 2)**
- The two lines at the bottom of the station display will flash (about 10 seconds.)

5 **Press the STATION CALL switch.**
- While the display is flashing, press the switch corresponding to the station which you wish to memorize or re-memorize.

When memorizing a station to Mode 1 (e.g. memorizing a station to No. 9):

By pressing the station call switch once, the station will be memorize to Mode 1. (Fig. 3)

When memorizing a station to Mode 2 (e.g. memorizing a station to No. 21):

By pressing the station call switch twice, the station will be memorized to Mode 2. (Fig. 4)
- After you press the STATION CALL switch, the display will flash for about 2 seconds, then the station will be memorized. If you press another switch while the display is flashing, the station will not be memorized.

Memorized station tuning

1 **Turn on the power to the tuner and your stereo amplifier.**

2 **Press the STATION CALL switch into which the desired station has been memorized.**

- To listen to a Mode 1 broadcast, press the switch once, and to listen to a Mode 2 broadcast, press it twice.
- When a STATION CALL switch is pressed, the display first shows the memorized number and frequency, then the signal strength and frequency, then the memorized number and frequency again.

NOTE:
If, for example, you wish to receive the station memorized in STATION CALL switch "13" when listening to the station memorized in switch "9", press switch "1/13" twice.

In this way, simple and accurate reception of any desired station is possible.

NOTE:
- *The contents of the STATION CALL switches will be preserved for several days, even if the tuner's power cord is unplugged.*
- *If a memorized station has been erased, re-memorize it.*

Last station memory

- When the POWER switch is pressed to turn power on, the last station received before the power was previously turned off will be received again.
- When power is ON, if the BAND switch is pressed, the last station received before the BAND switch was previously pressed will be received again.

HINTS FOR BETTER RECEPTION (See page 3)

ⓐ FM outdoor antenna
ⓑ 75Ω coaxial cable with PAL connector
ⓒ 75Ω coaxial cable without PAL connector
ⓓ Core
ⓔ Shield
ⓕ 75Ω terminals
ⓖ 300Ω feeder
ⓗ 300Ω terminals
ⓘ Ground terminal
ⓙ Ground
ⓚ AM indoor antenna (polyvinyl insulated wire)
ⓛ Outdoor AM antenna
ⓜ AM loop antenna

EXTERNAL FM ANTENNA

The main advantage of FM over AM is the quality of the broadcast signal. In order to benefit fully from the high signal quality of FM broadcasts, it is recommended that a special-purpose FM antenna be installed. In weak signal areas, a multi-element (3 element, 5 element, 7 element) antenna should be used.

NOTE:
Consult your dealer as to the selection and actual installation of the FM antenna.

FM ANTENNA CONNECTIONS (Figs. 5, 6)

There are two ways of connecting the FM antenna to the antenna input terminals: with a 300 Ω twin-lead feeder or with a 75 Ω coaxial cable. If full justice is to be done to the tuner's performance, a 75 Ω coaxial cable is reommended since it is more immune than the twin-lead feeder to noise and interference from external sources. If an FM antenna has already been erected outdoors, connect it, referring to the figure.

GROUNDING (Fig. 6)

Grounding is recommended if reception of FM programs is impaired by noise. To ground, connect a thick polyvinyl wire to the GND terminal and attach the other end to a metal water pipe or grounding bar or wind it around a copper plate and bury it.

NOTE:
Never connect a wire to a gas pipe for grounding since sparks may ignite the gas.

EXTERNAL AM ANTENNAS (Fig. 7)

If it is not possible to obtain adequate AM reception even by changing the orientation of the AM loop antenna, a separate indoor antenna, or an outdoor antenna should be installed.

INDOOR AM ANTENNA

Use a vinyl insulated wire (5-6m) and connect one end to the AM antenna terminal and affix the other end to the wall or ceiling, as high as possible.

OUTDOOR AM ANTENNA

If reception quality is not improved sufficiently even when an indoor antenna is used, a vinyl insulated wire should be installed outside and fixed in place.

NOTE:
Do not detach the AM loop antenna when using an indoor or an outdoor AM antenna.

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used. If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
No power	• Has the power cord been disconnected?	• Reconnect the power cord.
No sound	• Have any of the output cords been disconnected or incorrectly connected?	• Connect them properly to the TUNER terminals on the amplifier.
	• Has the antenna been disconnected or is the connection loose?	• Connect the antenna properly.
	• Station memory has been lost.	• Memorize the stations once again.
Sound distortion [On the FM band]	• Are the signals weak and reception poor?	• Substitute an FM outdoor antenna for the FM T-type antenna. • Set the FM MONO switch to ON (reception will be in monaural).
	• Static from other appliances (particularly automobiles) or multipath reflection (radio waves beamed off mountains and tall buildings and not received directly.)	• Try varying the height and direction of the antenna or use an FM outdoor antenna substituting a 75 Ω coaxial cable for the standard cable and fixing it as far away as possible from the street.
Sound distortion [On the MW or LW band]	• Is the AM loop antenna oriented poorly or located in an unsatisfactory position?	• Change the direction of the antenna until best reception is obtained as far as possible from tuner.
	• Static from other electrical appliances (fluorescent lights/motors?)	• Switch off other appliances or keep as far away as possible from the tuner when in use.
Stereo broadcasts not received in stereo.	• Are the signals weak, with insufficient input?	• Change to an outdoor FM antenna.
	• Is the FM MONO switch ON?	• Press the FM MONO switch OFF.

SPECIFICATIONS

[F-X450·F-X450L]

FM Tuner Section

Frequency range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... 12.7 dBf (1.2μV/75Ω)
50 dB Quieting Sensitivity ... Stereo; 36.2 dBf (17.7μV/75Ω)
Mono; 18 dBf (2.2μV/75Ω)
Sensitivity (DIN) ..... Mono; 0.9μV/75Ω
Stereo; 50μV/75Ω
Signal-to-Noise Ratio ..... Mono; 80 dB (at 80 dBf)
Stereo; 78 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN) ..... Mono; 66 dB
Stereo; 60 dB
Distortion ..... Stereo; 0.4% (1 kHz)
Alternate Channel Selectivity ..... 65 dB (400 kHz)
Stereo Separation ..... 45 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz±1 dB
Antenna Input ..... 300Ω balanced
75Ω unbalanced

MW Tuner Section

Frequency range ..... 531 kHz to 1,602 kHz
Sensitivity (IHF, Loop antenna) 300μV/m
Selectivity ..... 20 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop Antenna

LW Tuner Section (F-X450L only)

Frequency range ..... 153 kHz to 281 kHz
Sensitivity (IHF, loop antenna) 1,000μV/m
Antenna ..... Loop Antenna

Audio Section

Output
FM (100% MOD) ..... 650 mV/5.1 kΩ
AM (30% MOD) ..... 150 mV/5.1 kΩ

Miscellaneous

Power Requirements ..... a.c. 220 Volts ~ ,50/60 Hz
Power Consumption ..... 10 W
Dimensions ..... 360 (W)×81 (H)×327 (D) mm
Weight (without package) ..... 3.3 kg

Furnished Parts

FM T-type Antenna 1
AM Loop Antenna 1
Pin plug and Miniplug connecting cord 1
Operating instructions 1

NOTE:
Specifications and design subject to possible modification without notice due to improvements.

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Nous vous remercions d'avoir bien voulu faire l'acquisition de ce produit Pioneer.
Veuillez lire ces instructions d'emploi, elles vous permettront d'utiliser correctement votre appareil. La lecture terminée,conservez soigneusement ce mode d'emploi. il vous servira ultérieurement de référence. Dans certains pays, ou régions, la configuration de la prise peut être différente de celle apparaissant sur les illustrations. Les méthodes de raccordement et de manipulation demeurent cependant inchangées.

TABLE DES MATIÈRES

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Conseils pour une meilleure réception 13
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Fiche technique 14

CARACTÉRISTIQUES

Système d'accord automatique informatisé (CCTS) assurant une qualité sonore optimale

- Réduit les erreurs d'analyse á la réception des émissions FM et AM.
- Indication numérique de l'intensité du champ electrique de l'émission reçue.

Mémorisation aléatoire de 24 staions

Circuit SILENT SERVO

Etant donné que la fréquence de l'horloge n'est pas nécessaire après la syntonisation, ce circuit la coupe, améliorant ainsi la qualité du son en évitant les distorsions de bruit et d'intermodulation qui peuvent provenir d'interférences "battements" parasites de haute fréquence.

Circuit AM SERVO

Ce circuit réduit dramatiquement les distorsions, en réglant activement le temps de réponse AGC (Contrôle de Gain Automatique) pendant et après syntonisation.

CONNEXIONS (ET ACCESSOIRES) (Voir page 2)

① **Antenne Cadre AM fournie**

- Déployer vers l'extérieur les quatre pattes de l'antenne cadre AM et insérer la butée entre les pattes et dans l'orifice de l'antenne cadre AM pour l'immobiliser.
- Poser l'antenne sur une surface plate et rechercher la direction qui fournit la meilleure réception.
- Ne pas installer l'antenne à un endroit où elle toucherait le couvercle du tuner ou d'autres objets métalliques, ni à proximité d'un lecteur CD, d'un ordinateur personnel ou d'un téléviseur.

1. Dénuder l'extrémité des fils.
2. Enrouler dans le sens horaire l'extrémité du fil sur la base des bornes et visser les bornes à refus.

② **Antenne FM en "T" fournie**

- A utiliser pour la réception FM jusqu'à l'installation d'une antenne FM spécial.
- Déployer et tendre les deux bouts, puis les fixer sur une paroi, etc.

NOTE:
Reportez-vous à la partie supérieure de l'illustration de la page 2 au cas où les bornes d'antenne appartiennent au type ci-après; .

③ **Cordon fourni de raccord doté de fiches a broches et minifiches**

- Brancher la fiche blanche sur la borne blanche (L) et la fiche rouge sur la borne rouge (R).
- Confirmer l'exactitude de ce branchement.

④ **Antenne FM extérieure**

⑤ **Amplificateur stéréo**

⑥ **Branchement du cordon secteur**
Brancher la fiche du cordon d'alimentation dans la prise secteur auxiliaire (SWITCHED) de l'amplificateur ou dans une prise secteur ordinaire

⑦ **Mise à la terre**
Bien qu'une mise à la terre ne soit pas toujours indispensable à la réception, elle est conseillée du point de vue de la sécurité contre la foudre dans le cas où une antenne FM externe est installée. En outre, une bonne mise à la terre contribuera aussi à réduire le ronflement et autres parasites.

NOTE:
Ne jamais connecter le fil de mise à la terre sur une conduite de gaz car des étincelles pourraient déclencher une explosion.

*** Bornes de contrôle**
A l'usage d'un appareil Pioneer, porteur de la marque SR, reccorder la borne de contrôle (IN) sur le panneau arrière du tuner à la borne correspondante (OUT) sur l'appareil. Ceci permet de faire fonctionner le tuner à distance, grâce à la télécommande fournie avec l'appareil.

Si l'exploitaiton à distance n'est pas utilisée, cette connexion est alors inutile.

- L'unité de télécommande peut être utilisée pour la sélection de gamme d'onde et l'accord des stations préréglées.
- La raccorder à l'aide de mini-fiches téléphoniques d'accessoire.
- Quand aux instructions sur les connexions et le fonctionnement, prière de se reporter au mode d'emploi de l'appareil stéréo.